

Program of the 101st Statistical Mechanics Conference

**Rutgers University, Busch Campus, Hill Center, Room 114,
Sunday, Monday, Tuesday, May 10–12, 2009**

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Invited Talks

M. Schechter, University of British Columbia
Low temperature universality in disordered solids

N. Andrei, Rutgers University
Quantum impurities out of equilibrium

G. Montambaux, Universite Paris-Sud, CNRS
Quantum transport and Aharonov-Bohm effect in diffusive networks

G. Schoen, Universitat Karlsruhe
Single-electron tunneling and fluctuation theorem

D.J. Scalapino, University of California, Santa Barbara
A twisted ladder: relating the Fe superconductors to the high T_c cuprates

P. Woelfle, Universitat Karlsruhe
Transport through a barrier embedded in a Luttinger liquid: nonuniversal scaling at strong coupling

Copies of the presentations of the invited talks as well as information about past meetings, positions wanted and available, can be obtained at: <http://www.math.rutgers.edu/events/smm/>.

The next Statistical Mechanics Conference, the 102nd, is scheduled to take place
December 13–15, 2009.

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S. Kais, Purdue University
Finite size scaling in quantum mechanics

G. Falkovich, Weizmann Institute
Symmetries of turbulent state

A. Kapitulnik, Stanford University
Recent results on the superconductor-insulator transition

A. Yacoby, Harvard University
Coherent control of two-electron logical spin qubits

I. M. Sigal, University of Toronto
On quantum decoherence

T. Spencer, Institute for Advanced Study
Diffusion in a 3D SUSY hyperbolic sigma model

B. Nachtergaele, University of California, Davis
Applications of Lieb-Robinson bounds

J. Weeks, University of Maryland
Competition between local hydrogen-bonding and long-ranged dipolar forces in water

F. Stillinger, Princeton University
Modeling prebiotic appearance of biological chirality

M. Widom, Carnegie Mellon
Folding of riboswitches during RNA transcription

B. Schmittman, Virginia Tech.
Consensus formation in social networks

S. Solla, Northwestern University
Statistical physics, Bayesian inference, and neural information processing

M. Magnasco, Rockefeller University
Self-tuned critical networks

Human rights session (With J. Lebowitz and others)

J. Harris, Yale University
New measurements of persistent currents in normal metal rings

A. Giuliani, University of Rome
Rigorous construction of the ground state correlations of graphene

P. Cvitanovich, Georgia Tech.
Geometry of turbulence: a stroll through 61,506 dimensions

D. Ruelle, IHES, France

Linear response for general smooth dynamical systems

D. Hone, Kavli Institute for Theoretical Physics, UCSB

Statistical mechanics of Floquet systems

A. Sengupta, Rutgers University

Action at a distance in eukaryotic gene regulation

R. Levy, Rutgers University

Exploring landscapes for protein folding, binding, and fitness

R. Livi, Istituto Nazionale di Fisica Nucleare (INFN)

Multiple timescales in a model for DNA denaturation dynamics

J. Beck, Rutgers University

Randomness in mathematics

D. Ruelle, IHES, France

Randomness in nature

K. Moler, Stanford University

Persistent currents in gold rings

D. Huse, Princeton University

Strongly-correlated cold atomic Fermi gas

A. Middleton, Syracuse University

Simulating dynamics in glassy models using exact sampling

G. Kozma, Weizmann Institute

Geometric scale-free graphs

D. Abraham, University of Oxford

Ising strips, confinement and all that

F. Wu, Northeastern University

Lattice statistics on kagome-type lattices

G. Caginalp, University of Pittsburgh

Phase field equations: the next generation

C. Villani, UMPA, Ecole Normale Supérieure de Lyon/IAS

Landau damping

S. Olla, Université de Paris–Dauphine

From microscopic Hamiltonian dynamics to heat equation: a weak coupling approach

T. Bodineau, Ecole Normale Supérieure

Current large deviations for dissipative dynamics

Short Talks (* identifies speaker)

Stefan Grosskinsky*, Paul Chleboun and Gunter M. Schuetz, University of Warwick
Instability of condensation of the zero-range process with random interaction

Jianzhong Wu, University of California in Riverside
Solvation of a spherical cavity in simple liquids: stretching the limits

Stefan Kehrein, University of Munich, Germany
Weak interaction quenches in quantum many-body systems

Ronald Fisch, Princeton University
Finite-scaling critical behavior of randomly pinned spin-density waves

Mustafa Keskin, Erciyes University
Existence of a dynamic compensation temperature of a mixed spin-2 and spin-5/2 Ising ferrimagnetic system in an oscillating field

Eduardo Neves*, R. Fernandez and L. R. Fontes, University of Sao Paulo, Brazil
Time dependent interaction models

Alexander Shpunt, MIT
Self-assembly on a scaffold: a kinetic perspective

Hussain Zaidi*, Luke Langsjoen, Joe Straley and Eugene Kolomeisky, University of Virginia
Geometrical interpretation of the non-universal Casimir energy of an infinite cylindrical wedge

Rafael Greenblatt*, Michael Aizenman and Joel L. Lebowitz, Rutgers University
Rigorous derivation of the Imry-Ma phenomenon for quantum lattice systems

Stefan Mashkevich* and Stephane Ouvry, Schrodinger Inc.
Statistics of discrete planar random walks

N. Diamantis, U. Nottingham and Peter Kleban*, University of Maine
A Hamburger theorem for percolation

Sungchul Ji, Julie Bianchini*, William Kim and Andrew Davidson, Rutgers University
Experimental evidence for a quasi-deterministic relation between structural and timing genes in the Budding Yeast *Saccharomyces cerevisiae*

Sungchul Ji, Rutgers University
Three kinds of informations (iconic, indexical, and symbolic) carried by molecular signs

Nerses Ananikyan*, V. Abgaryan, L. Ananikyan and A. Kocharian, Yerevan Physics Institute
Negativity and thermal entanglement for a spin 1 Heisenberg model with longitudinal crystal field

Benjamin Sauerwine* and M. Widom, Carnegie Mellon University
Competition between structural elements in riboswitches

Andrej Kosmrlij*, Mehran Kardar, Arup Chakraborty and Eugene Shakhnovich, MIT
Thymic selection of T-cell receptors as an extreme value problem

Hui Dai*, Zachary Geary and Leo P. Kadanoff, University of Chicago
Asymptotics of eigenvalues and eigenvectors of Toeplitz matrices

Tobias Kuna, University of Reading
Hydrodynamic scaling for jump type processes in the continuum

Michael Kiessling, Rutgers University
Some monotonicity properties of ground state energies